Intracranial Foreign Body in a Patient With Paranoid Schizophrenia

Andereggen, Lukas ; Biétry, Damien ; Kottke, Raimund ; Andres, Robert H

Abstract: Self-inflicted penetrating head injuries in patients with paranoid schizophrenia are an infrequent phenomenon. The authors report on a psychiatric patient who presented with epistaxis. Computed tomography showed a nail passing from the nasal cavity into the frontal lobe. Given the proximity to large intracranial vessels, a craniotomy was performed and the nail was retracted. The patient later reported having hammered the nail into the nasal cavity with the intention to "kill the voice in my head." Despite use of the latest imaging modalities, metal artifacts may have limited the assessment of vascular involvement. Surgical decision-making preventing secondary damage is crucial in them.

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complications after 20 months of follow-up. Muhammad et al[24] treated mandibular asymmetry in a young boy using distraction osteogenesis and BioGlue for adhesion of a conchal graft. Sidle and Maas[25] evaluated the shear strength of periosteum in human cadavers reattached with BioGlue adhesive and found that BioGlue had sufficient fixation strength.

In this study, we compared 2 different adhesives applied as a barrier with autografted calvarial critical-size defects with conventional resorbable collagen membrane. In this study stereological analyses were used. Due to the possibility of examination in 3 dimensions stereological analyses show more reliable results than conventional histological methods.[26] In stereological analyses of new bone formation and connective tissue, we found no significant differences among the groups.

CONCLUSION

BioGlue and Glubran 2 may be used as barrier membranes for guided bone regeneration. When compared with collagen membrane, these 2 materials were easier to apply and conferred more stability. The main goal of our study was to investigate defect treatment, so we did not evaluate the structural features of the adhesives. Further study is needed to determine the total resorption times of these materials.

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Intracranial Foreign Body in a Patient With Paranoid Schizophrenia

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Abstract: Self-inflicted penetrating head injuries in patients with paranoid schizophrenia are an infrequent phenomenon. The authors report on a psychiatric patient who presented with epistaxis. Computed tomography showed a nail passing from the nasal cavity into the frontal lobe. Given the proximity to large intracranial vessels, a craniotomy was performed and the nail was retracted. The patient later reported having hammered the nail into the nasal cavity with the intention to "kill the voice in my head." Despite use of the latest imaging modalities, metal artifacts may have limited the assessment of vascular involvement. Surgical decision-making preventing secondary damage is crucial in them.

Key Words: Computed tomography, nail, secondary damage, vessels

Risk stratification and treatment planning for penetrating head injures involves consideration of the both the immediate injury and subsequent implications. While streak artifacts arising from a nail often prevent clear assessment of its exact position, thereby impeding treatment planning, clinical decision making should be focused on preventing further damage.[1,2]

CLINICAL PRESENTATION

A 48-year-old man with paranoid schizophrenia was admitted to the emergency department because of epistaxis and altered mental status impeding anamnesis. Vital signs were normal and physical examination revealed no focal neurological deficits but mild oral dyskinesia. Upon clinical inspection, a metallic foreign body was found fixed in the right nasal passage. Otoscopy revealed a perforation of the right tympanum. Subsequent plain skull X-rays and computed tomography (CT; Fig. 1A–D) with CT angiography (Fig. 1I) showed an 11-cm long construction nail passing from the right nasal cavity through the ethmoid air cells into the left frontal lobe (Fig. 1A–H). The exact relation to the left anterior cerebral artery (ACA) in proximity to the foreign body was uncertain (Fig. 1J). After bifrontal craniotomy, the frontal skull base and the ACA complex were microsurgically explored and the vessels found to be intact, but in close contact with the foreign body. The nail was then removed under microscopic control (Fig. 1L). The frontal skull base was reconstructed with autologous galea-periost and the nasal bleeding sealed with tamponades.

The patient later reported having intentionally hammered the nail first into the right ear and then into the nasal cavity with the intention to "kill the voice in my head." A tetanus booster was administered. The patient was treated with a course of broad-spectrum antibiotics (ceftriaxon, metronidazole, and flucloxacillin) for 10 days. The psychiatric therapy with an atypical neuroleptic (olanzapine) was continued, resulting in marked reduction of psychotic symptoms. One-year follow-up was uneventful.

DISCUSSION

Self-inflicted injury of the head with a nail is an infrequent and idiosyncratic phenomenon,[2–7] mainly associated with psychotic illness.[5] In patients with paranoid schizophrenia, reasons for self-inflicted injuries are either to kill the inner voice,[8] obedience to auditory hallucinations,[9] or suicide attempts.[3–5] On rare occasions, foreign bodies in the head have been found incidentally without the patient being aware of their presence.[6] Interestingly, most patients with psychotic disorders who attempt suicide by inserting nails in or at close proximity to the midline experience no sequelae.[6,10] Furthermore, neurological deficits or infections resulting from stabbing a nail into the head are hardly ever reported.[11] In contrast to high-velocity projectiles with less risk of pyogenic infections,[12] an indwelling nail presumably has a higher risk of being contaminated,[13] and therefore a tetanus booster and broad-spectrum antibiotics were administered.

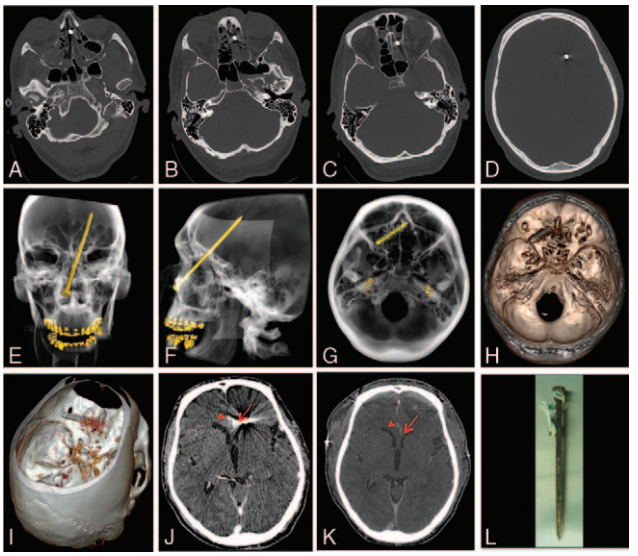

FIGURE 1. Computed tomography (CT) and CT angiography with reconstruction to evaluate intracranial nail position. (A–D) Bone CT scan showing the path of the nail through the nasal cavity (A), ethmoid air cells (B), cribriform plate (C), and intracranial periventricular location (D). (E–H) Three-dimensional semitransparent reconstructions in coronal (E), sagittal (F), and axial orientation (G), and 3D reconstructions illustrating the position of the nail in the anterior skull base. (H, I) CT angiogram shows the relationship of the presumed nail tip to both anterior cerebral arteries (ACAs) (K, arrowhead). Note the streak artifacts arising from the nail precluding reliable assessment of vessel involvement (J, arrow). Postoperative CT angiogram without metal artifact clearly depicts both ACAs without pseudoaneurysm formation (K). The photograph shows the retracted nail (L).

Streak artifacts arising from the nail prevented a clear assessment of the exact position of the nail tip in relation to the ACA, so we decided on an exploratory procedure. The intraoperative site was further irrigated with gentamicin and the defect at the skull base sealed to prevent cerebrospinal fluid leak, a major risk factor for infection.[14] Cerebral angiography in nail injuries may rule out acute vascular injuries in addition to providing hints as to traumatic pseudoaneurysms or fistula development.[15] Gupta et al[2] recently reported the usage of dual-energy CT allowing for better suppression of streak artifacts. Despite the low likelihood of vessel involvement, ensuring timely vascular control might nevertheless have been difficult. Furthermore, preventing cerebrospinal fluid leaks and related infections, although rarely reported, might be better prevented by surgical exploration and irrigation.

CONCLUSION

Metal artifacts from an indwelling nail after self-inflicted injury may limit evaluation of possible vascular involvement and therefore careful assessment is vital in preventing secondary damage.

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This study was approved by the Ethical Committee of Bern (Kantonale Ethikkommision, KEK, Bern, Switzerland), the Swiss Ethic Committee on research involving humans. The study has been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki and its later amendments.
The authors report no conflicts of interest.

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Spontaneous Healing of Clodronate-Related Osteonecrosis of the Jaw

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Abstract: Cases of medication-related osteonecrosis of the jaw (MRONJ) have been more commonly associated with aminobiphosphonate therapy than with alkylbiphosphonate treatment. Here, we report a case of MRONJ in a subject who received an alkylbiphosphonate, clodronate, for the treatment of osteoporosis, and discuss the pathogenic mechanisms of alkylbiphosphonates and the possible reasons for the spontaneous and rapid remission of MRONJ occurring in our patient.

Key Words: Clodronate, jaw, osteonecrosis

Bisphosphonates have been employed in the therapy of subjects with malignant bone tumors and severe osteoporosis. Nevertheless, in the recent years, a number of bisphosphonate-related osteonecrosis of the jaw (BRONJ) cases are augmented.[1]

BRONJ has been identified as prolonged chronic inflammation of oral tissue and alveolar bone necrosis frequently associated with anomalous tooth extraction wound healing. In fact, the natural evolution of osteonecrosis of the jaw usually commences with a superficial mucosal ulcer in the jaw, which progresses to visible exposure of bone and enlargement of the ulcerated area in extensiveness and deepness with bony necrosis and sequestration.[2]

Of the bisphosphonates, the ones most apt to provoke BRONJ are aminobiphosphonates, probably because they are more powerful than alkylbiphosphonates. Really, pamidronate, alendronate, and zoledronate are 10-, 100-, and 1000-fold more powerful than clodronate.[3]

However, even though cases of BRONJ have been less commonly associated with alkylbiphosphonate therapy than with aminobiphosphonate treatment, we report here on a case of BRONJ in a subject who received an alkylbiphosphonate, clodronate, for the treatment of osteoporosis. Usually the BRONJ has been treated with use of antibiotic therapy together with surgical debridement and often, local placement collagen-sponge. Here we report a case of mucosal spontaneous healing without surgery.

CLINICAL REPORT

A 72-year-old female was referred to the Department of Oral and Maxillofacial Surgery with a diagnosis of dry socket/alveolar osteitis of the inferior right second molar region, which had been lasting since 2 weeks. The patient reported that a private dentist had managed her for the extraction of the lower second right molar. The extraction had been performed with local anesthetic with adrenaline 2 months before. At the time of dental surgery, she told her dentist of being taking only D3 vitamin for her osteoporosis and denied any use of bisphosphonates.

At the admission in the Unit of Oral surgery of our University, we asked the patient again about the use of antiresorptive drugs and she told us that she had taken clodronate 200 mg once a month intramuscular for 3 months. The first dose had been taken 1 month before dental extraction (June 20th). The second dose had been taken the day after the extraction (July 21st), and the third and last dose, 1 month later (August 19th).

After the extraction, the patient had taken oral antibiotics (amoxicillin twice a day for 1 week) and done oral rinses with 0.12% chlorhexidine once a day. During clinical follow-up, her dentist reported the normal healing of socket and mucosa and no pain or swelling had been reported.

On September 28th, 2 months after dental extraction and 1 month after the last dose of clodronate, the patient reported a sensation of "cutting ridge" on the lingual right margin with a moderate pain (VAS 5). The clinical view at the time of this complication showed

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